Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SAJIT BHASKARAN and ABRAHAM R. MATTHEWS

Appeal No. 2001-1791
Application No. 08/992,038

ON BRIEF

Before GROSS, BARRY, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-12 and 14-18, which are all the claims remaining in the application.

We affirm-in-part.

BACKGROUND

The invention is directed to method and apparatus for performing dynamic load balancing on multiple network servers. Claim 1 is reproduced below.

> 1. A method for assigning a plurality of data requests among a plurality of servers, said method comprising:
>
> determining a load on each of said plurality of servers, wherein said load on each of said plurality of servers is computed relative to a power rating of each of said plurality of servers;
>
> assigning each of said data requests to a bucket of a first plurality of buckets, wherein said first plurality of buckets outnumber said plurality of servers; and
>
> assigning each bucket of said plurality of buckets containing a data request to a server of said plurality of servers in response to said load on each of said plurality of servers.

The examiner relies on the following references:

Rege	5,612,897	Mar. 18, 1997 (filed Mar. 21, 1996)
Li	5,634,125	May 27, 1997 (filed Sep. 2, 1993)
Sitbon et al. (Sitbon)	5,951,634	Sep. 14, 1999 (filed Jun. 28, 1995)

Shashi Shekhar et al. (INTERNET), Load-Balancing in High Performance GIS: Partitioning Polygonal Maps, available at http://www-users.cs.umn.edu/~siva/Papers/SSD95/top.html (Sep. 13, 2002), pp. node16.html - node20.html and node28.html (1995).[1]

[1] We will follow the examiner's convention of referring to the document as "INTERNET." The copy of record appears to be pages printed from the noted web address, representative of a paper published in 1995.

Claims 1, 4, 5, 6, 10, 11, and 14-18 stand rejected under 35 U.S.C. § 103 as being unpatentable over INTERNET and Sitbon.

Claims 2, 3, and 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, and Rege.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, and Li.

Claim 9 stands rejected under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, Li, and Rege.

We refer to the Final Rejection (mailed Apr. 21, 2000) and the Examiner's Answer (mailed Jan. 22, 2001) for a statement of the examiner's position and to the Brief (filed Oct. 26, 2000) for appellants' position with respect to the claims which stand rejected.

OPINION

Appellants contest the examiner's finding (Answer at 4) that Sitbon teaches, in the language of claim 1, "wherein said load on each of said plurality of servers is computed relative to a power rating of each of said plurality of servers." Sitbon describes, particularly at column 4, lines 10 through 34, calculating the load on each of a plurality of servers using weighting factors dependent on the nature of the application being run on the client. Of greater interest, however, are factors representing percentage of utilization of each of the servers.

W_{cpu} is the percentage of utilization over time of the central processor of the server (ally), W_{mem} is the percentage of utilization of the memory with respect to the total capacity of the memory of the server, and W_{net} is the percentage of utilization of the network by the server.

Appellants do not allege error in the examiner's view that the "power rating" may be interpreted as the highest operational capacity of a device. However, appellants' position (Brief at 11) is that the "total allowed" is not used by Sitbon to calculate the load. Appellants argue that the "total allowed" is not used in any load calculations because the "power rating" is eliminated by using the ratio of the "amount of utilization" to the "total allowed."

In our view, using the ratio of the "amount of utilization" to the "total allowed," as taught by Sitbon, is a computation "relative to a power rating" within the meaning of instant claim 1. For example, the percentage of the memory capacity actually used in a server with respect to the total memory capacity of the server provides a measure that is relative to the server's total memory capacity. The plain language of the claim does not require that the "power rating" itself -- e.g., total memory capacity, expressed as a number of bits, bytes, or words -- be used in calculating the load.

We note that appellants refer to the specification (Brief at 10) and allege that the load calculation in the instant disclosure is based on both the percentage of utilization and the power rating of a server. First, however, the allegation is not correct. The quoted section of the specification refers to determining "credit," rather than determining

a "load," as recited in instant claim 1. Second, claims are to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969).

We therefore are not persuaded of error in the section 103 rejection of claim 1. Appellants group claims 4, 5, 10, 11, 14, and 15 with claim 1, and do not provide separate arguments for any of the other claims grouped with claim 1. We thus sustain the rejection of claims 1, 4, 5, 10, 11, 14, and 15 under 35 U.S.C. § 103 as being unpatentable over INTERNET and Sitbon. See 37 CFR § 1.192(c)(7).

However, we agree with appellants (Answer at 11-12) that the examiner has failed to set forth a prima facie case of obviousness for the subject matter of claims 2, 3, and 12. At best, the combination of INTERNET, Sitbon, and Rege demonstrates that data requests "can be" assigned to a bucket based on a source address, which represents an improper standard in the obviousness inquiry. Further, we find that the Rege reference's general statement at column 2, lines 20 through 27 would not have led the artisan to make the combination required by claim 2 or claim 12. We therefore do not sustain the rejection of claims 2, 3 (depending from claim 2), and 12 under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, and Rege.

We agree with appellants (Brief at 13) to the extent that the examiner's statement of the rejection of claim 6 (Answer at 5-6) falls short of meeting all the requirements of a prima facie case of obviousness. However, as the examiner points out at page 14 of the Answer, the claim does not set forth how a "credit" is to be calculated. Further, we agree with the examiner that Sitbon, particularly at column 5, lines 55 through 65, would have suggested determining a least loaded server and requesting services of that server accordingly. The combination of the teachings of Sitbon with the INTERNET reference's teachings with respect to associating buckets with servers leads us to agree with the examiner's conclusion that the subject matter of claim 6 would have been obvious to the artisan. Since appellants rely on the limitations of claim 6 as representative of claims 6, 7, and 16-18 (Brief at 6), and present arguments accordingly, we sustain the rejection of claims 6 and 16-18 under 35 U.S.C. § 103 as being unpatentable over INTERNET and Sitbon, and the rejection of claim 7 under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, and Li.[2]

However, with respect to claim 8, we agree in substance with appellants' arguments at page 14 of the Brief. The rejection of claim 8 (Answer at 9 and 15) does not appear to speak to the express requirements of the claim. In any event, all the requirements of claim 8 have not been shown to be rendered obvious by the references applied. Since claim 9 depends from 8, and the addition of the Rege reference does

[2] We note, further, that appellants have shown no error in the examiner's finding (Answer at 8-9) that Li teaches the claim 7 requirement of detecting a skewed load on a plurality of servers.

not remedy the deficiency of the rejection applied against claim 8 (and we have determined the insufficiency of Rege's general statement at column 2 with respect to avoiding "substantial rearrangement of components"), we sustain the rejection of neither claim. We thus do not sustain the rejection of claim 8 under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, and Li, and do not sustain the rejection of claim 9 under 35 U.S.C. § 103 as being unpatentable over INTERNET, Sitbon, Li, and Rege.

CONCLUSION

We have sustained the rejections of claims 1, 4, 5, 6, 7, 10, 11, and 14-18 under 35 U.S.C. § 103, but have not sustained the rejections of claims 2, 3, 8, 9, and 12 under the same statute. The examiner's decision in rejecting claims 1-12 and 14-18 is thus affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

ANITA PELLMAN GROSS Administrative Patent Judge	)
LANCE LEONARD BARRY Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)

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